DEFINITION OF CHEMISTRY CHAPTER 1 TILL CHAPTER 4

Chapter 1

Chemistry is the study of composition, structure, properties and interactions of matter.

Chemistry in our daily life is Helium gas (Used to fill weather balloons)

Chapter 2

Matter is made up of tiny and discrete particles.

Atom – Atom is the smallest particle of element that can participate in a chemical reaction.

Molecule – A molecule is a group of two or more atoms which joined chemically

Ion – An ions is positively charged or negatively charged particle

Kinetic Theory of Matter – a) Matter consists of discrete particles

b) Particles are always moving randomly

Proton Number – The number of proton in an atom of an element

Nucleon number – Total number protons and neutrons in an atom of an element

$_{Z}^{A}X$ → A – the nucleon number

→ Z – the proton number

Isotope – An element which same number of protons but different number of nucleon.

(Use of isotope →Sodium - 24→ To detect the location of blood clotting

→Cobalt - 60→ To kill cancerous cell

→Carbon -14→ To estimate the age of artifacts)

Chapter 3

Relative atomic mass (No Units)→ Is the average mass of one atom of the element compared to $^{1}/_{12}$ of the mass of an atom of carbon-12.

Relative molecular mass (No Units)→ Is the average mass of one molecule of the compound compared to heavier than $^{1}/_{12}$ of the mass of an atom of carbon-12.

Carbon-12 use as standard because →Can be easily handled

→ Most abundant(99%) carbon isotope

→Easily Available

One mole → Is an amount of substance that contain many particles as in 12g of carbon-12

Avogadro constant → The number of particle in one mole of a substance

Molar mass (Unit : g mol^{-1})→ The molar mass of a substance is the mass of one mole of the substance

Molar volume of gas →The volume of gas is the volume occupied by one mole of the gas

Molecular formula (Molecular = $(Empirical\ formula)_n$)→ Is the actual number of atoms of each element in a molecule of the compound

Empirical formula → Is the simplest ratio of atoms of elements that combine to form the compound

Chapter 4

Use of group 18:

Helium→ Weather balloons and airships

Neon→Advertising lights

Argon→Electrical bulbs

Kryton→High speed photographic flash lamps

Xenon→Electron tubes

Radon→ Cancer treatment

Transition coloured compound/ion

Nickel →

Chromium →

Iron (2) →

Green

Iron (3) →

BROWN

Copper (2) →

BLUE

Cobalt (2) →

Manganese (2)→

PINK